

Шейнаре
за класно работи
по английс
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II гр.

11. XI, 80г. Красна работа №1

① Пресметнете стойността на дадените изрази:

$$\frac{\sqrt{65^2 - 33^2}}{24} \quad \text{точно.}$$

$$\frac{\sqrt{7}}{\sqrt{11} - \sqrt{7}} \quad \text{с точност } 0,1$$

② Проверете кое от числата е корен на уравнението:

$$x^2 - 3\sqrt{2}x - 2 = 0 \quad \text{за } \frac{\sqrt{3} + \sqrt{2}}{1 - \sqrt{2}} \text{ или}$$

③ Проверете вярно ли е неравенството:

$$3\sqrt{2} < 3(2\sqrt{2} - 1) + \sqrt{3}$$

Изыскание

$$\sqrt{\frac{65^2 - 33^2}{2^4}} = \sqrt{\frac{(65-33)(65+33)}{2^4}} = \sqrt{\frac{32 \cdot 98}{2^4}}$$

$$= \sqrt{\frac{2^3 \cdot 4 \cdot 98}{2^4}} = \sqrt{\frac{2^3 \cdot 2^2 \cdot 98}{2^4}} = \sqrt{98 \cdot 2} =$$

$$= \sqrt{4 \cdot 49} = \sqrt{4} \cdot \sqrt{49} = 2 \cdot 7 = \underline{\underline{14}} \quad \checkmark$$

$$\frac{\sqrt{7}}{\sqrt{11} - \sqrt{7}} = \frac{\sqrt{7}(\sqrt{11} + \sqrt{7})}{(\sqrt{11} - \sqrt{7})(\sqrt{11} + \sqrt{7})}$$

$$= \frac{\sqrt{77} + \sqrt{49}}{11 - 7} = \frac{\sqrt{77} + 7}{4} = \frac{\sqrt{77} + 7}{4} \quad \checkmark$$

=

~~$$x^2 - 3\sqrt{2}x - 2 = 0$$~~

~~$$(x - \sqrt{2})^2 = 0$$~~

~~$$(\sqrt{3} + \sqrt{2} - \sqrt{2})^2 = 0$$~~

~~$$(\sqrt{3})^2 = 0$$~~

~~$$3 \neq 0$$~~

~~$$(1 - \sqrt{2} - \sqrt{2})^2 = 0$$~~

~~$$(1 - 2\sqrt{2})^2 = 0$$~~

~~$$1 + 4 \cdot 2 - 2 = 0$$~~

~~$$1 + 8 - 2 = 0$$~~

~~$$9 - 2 = 0$$~~

~~$$7 \neq 0$$~~

$$3\sqrt{2} < \sqrt{3}(2\sqrt{2} - 1) + \sqrt{3}$$

$$3\sqrt{2} < 2\sqrt{6} - \sqrt{3} + \sqrt{3}$$

$$\sqrt{18} < \sqrt{24} \quad \checkmark$$

Да, неравенство верно.

$$\begin{aligned}
 x^2 - 3\sqrt{2}x - 2 &= 0 \\
 x^2 - \sqrt{18}x - 2 &= 0 \\
 (\sqrt{3} + \sqrt{2})^2 - 3\sqrt{2}(\sqrt{3} + \sqrt{2}) - 2 &= 0 \\
 5 + 2\sqrt{6} - 3\sqrt{2}(\sqrt{3} + \sqrt{2}) - 2 &= 0 \\
 5 + 2\sqrt{6} - 3\sqrt{6} - 3\sqrt{4} - 2 &= 0 \\
 3 + 2\sqrt{6} + 2 - 3\sqrt{6} - 3\sqrt{4} - 2 &= 0 \\
 3 - \sqrt{6} + 3\sqrt{4} &= 0 \\
 3 - \sqrt{6} + 3 \cdot 2 &= 0 \\
 3 - \sqrt{6} + 6 &= 0 \\
 -9 - \sqrt{6} &= 0
 \end{aligned}$$

За да бъде равно на 0, $\sqrt{6}$ трябва да е равно на 9. Но то не е равно на 9 $\Rightarrow 9 - \sqrt{6} \neq 0$

$$\begin{aligned}
 (4 - \sqrt{2})^2 - 3\sqrt{2}(4 - \sqrt{2}) - 2 &= 0 \\
 1 + 2\sqrt{2} - 2 - 3\sqrt{2} + 3\sqrt{4} - 2 &= 0 \\
 1 + 2\sqrt{2} - 2 - 3\sqrt{2} + 6\sqrt{2} - 2 &= 0 \\
 -3 - 4\sqrt{2} &= 0 \\
 -3 - \sqrt{28} &= 0 \\
 -3 - \sqrt{4} \cdot \sqrt{7} &= 0 \\
 -3 - 2 \cdot \sqrt{7} &= 0 \\
 -6\sqrt{7} &= 0
 \end{aligned}$$

Пример $\sqrt{7}$ да е 0, но $\sqrt{7} \neq 0$
 $\Rightarrow -6\sqrt{7} \neq 0$

Внимаване в знаците и формулите.

8/10/11

Решение: Ами

18.11.80г. Поправка на класна работа №1

$$\begin{aligned}
 1. \sqrt{\frac{65^2 - 33^2}{2^4}} &= \sqrt{\frac{(65-33)(65+33)}{2^4}} = \sqrt{\frac{32 \cdot 98}{2^4}} = \\
 &= \sqrt{\frac{2^3 \cdot 4 \cdot 98}{2^4}} = \sqrt{\frac{2^2 \cdot 2^2 \cdot 98}{2^4}} = \sqrt{2 \cdot 98} =
 \end{aligned}$$

$$= \sqrt{4 \cdot 49} = \sqrt{4} \cdot \sqrt{49} = 2 \cdot 7 = \underline{\underline{14}}$$

$$\frac{\sqrt{7}}{\sqrt{11} - \sqrt{7}} \cdot \frac{\sqrt{7}(\sqrt{11} + \sqrt{7})}{(\sqrt{11} - \sqrt{7})(\sqrt{11} + \sqrt{7})} = \frac{\sqrt{77} + 149}{11 - 7}$$

$$= \frac{\sqrt{77} + 7}{4} = \frac{8.8 + 7}{4} = \frac{16.5}{4} = \underline{\underline{4.1}}$$

$$x^2 - 3\sqrt{2} \cdot x - 2 = 0 \quad \sqrt{3} + \sqrt{2}$$

$$(\sqrt{3} + \sqrt{2})^2 - 3\sqrt{2} \cdot (\sqrt{3} + \sqrt{2}) - \underbrace{1 - \sqrt{2}}_{-2} = 0$$

$$3 + 2\sqrt{6} + 2 - 3\sqrt{2} \cdot (\sqrt{3} + \sqrt{2}) - 2 = 0$$

$$5 + 2\sqrt{6} - 3\sqrt{6} + 3\sqrt{4} - 2 = 0$$

$$5 - \sqrt{6} - 3\sqrt{4} - 2 = 0$$

$$5 - \sqrt{6} - 3\sqrt{6} - 2 = 0$$

$$5 - \sqrt{6} - 6 - 2 = 0$$

$$-3 - \sqrt{6} = 0$$

$$-3 - \sqrt{6} \neq 0 \Rightarrow \sqrt{3} + \sqrt{2} \text{ не е корен}$$

$$x^2 - 3\sqrt{2} \cdot x - 2 = 0$$

$$(1 - \sqrt{2})^2 - 3\sqrt{2} \cdot (1 - \sqrt{2}) - 2 = 0$$

$$1 - 2\sqrt{2} + 2 - 3\sqrt{2} + 3\sqrt{4} - 2 = 0$$

$$3 - 5\sqrt{2} + 3\sqrt{4} = 0$$

$$1 - \sqrt{50} + \sqrt{36} = 0$$

$$1 - \sqrt{50} + 6 = 0$$

$$7 - \sqrt{50} = 0$$

$$7 - 50 \neq 0 \Rightarrow 1 - \sqrt{2} \text{ не е корен}$$

$$3\sqrt{2} < \sqrt{3}(2\sqrt{2} - 1) + \sqrt{3}$$

$$3\sqrt{2} < 2\sqrt{6} - \sqrt{3} + \sqrt{3}$$

$$\sqrt{18} < \sqrt{24}$$

$\Rightarrow$ неравенството е вярно

Пр.

24. IV. 81 г. Класна работа № 2

1. Решете уравнението:

$$\sqrt{2}x^2 - 1 = 7$$

2. Решете неравенството:

$$3x^2 - x + 1 > 0$$

3. Решете системата:

$$\begin{cases} x - y = -5 \\ x^2 + y^2 = 14 \end{cases}$$

Изискване

$$1. \sqrt{2x^2-1} = 7$$

$$(\sqrt{2x^2-1})^2 = 7^2$$

$$2x^2-1=49$$

$$2x^2=50$$

$$x^2=25$$

$$x = \sqrt{25} \quad x = \pm 5$$

$$2. 3x^2-x+1 > 0 \quad 3x^2-x+1=0$$

$$D = 1 - 4 \cdot 1 \cdot 3 =$$

$$= 1 + 12 = 13$$

$D < 0$ не реални
корени

Неравенството!?

Избр.?

Проверка!?

$$3. \begin{cases} x-y=+5 \\ x^2+y^2=17 \end{cases} \quad \begin{aligned} -y &= -5-x \quad | \cdot (-1) \\ y &= 5+x \end{aligned}$$

$$x^2 + (5+x)^2 = 17$$

$$x^2 + 25 + 10x + x^2 - 17 = 0$$

$$2x^2 + 10x + 8 = 0 \quad | :2$$

$$x^2 + 5x + 4 = 0 \quad D = 25 - 16 = 9$$

$$x_{1,2} = \frac{-5 \pm 3}{2} \quad x_2 = \frac{-5-3}{2}$$

$$x_1 = \frac{-5+3}{2} \quad x_2 = -4 \quad \checkmark$$

$$x_1 = -1 \quad \checkmark$$

$$\begin{aligned} y_1 &= 5 + x_1 \Rightarrow y_1 = 5 - 1 \Rightarrow y_1 = 4 \\ y_2 &= 5 + x_2 \Rightarrow y_2 = 5 - 4 \Rightarrow y_2 = 1 \end{aligned}$$

$$\underline{(-1; 4) (-4; 1)} \quad \checkmark \quad \text{аккуп. (5; 1)}$$

$$3\sqrt{2} < 3(2\sqrt{2}-1)+\sqrt{3}$$

$$3\sqrt{2} < 6\sqrt{2}-3+\sqrt{3}$$

$$\frac{\sqrt{7}}{\sqrt{11}-\sqrt{7}} = \frac{\sqrt{7} \cdot \sqrt{2}}{(\sqrt{11}-\sqrt{7}) \cdot \sqrt{2}} = \frac{\sqrt{14}}{\sqrt{22}-\sqrt{14}}$$

$$= \frac{\sqrt{35} + \sqrt{25}}{7-5} = \frac{98}{2} = 49$$

$$= \frac{\sqrt{35} + 5}{2} = \frac{8}{18} = \frac{4}{9}$$

$$= \frac{\sqrt{5}}{4\sqrt{7}-\sqrt{3}} = \frac{15(\sqrt{7}+\sqrt{3})}{(\sqrt{7}-\sqrt{3})(\sqrt{7}+\sqrt{3})} = \frac{15(\sqrt{7}+\sqrt{3})}{7-3} = \frac{15(\sqrt{7}+\sqrt{3})}{4}$$

$$(\sqrt{3} + \sqrt{2})^2 = (\sqrt{3})^2 + 2\sqrt{3} \cdot \sqrt{2} + (\sqrt{2})^2 = 3 + 2\sqrt{6} + 2 = 5 + 2\sqrt{6}$$

$$16, 5:4=4, 125$$

$$16 \div 5 = 3 + 2\sqrt{6} + 2 = 5 + 2\sqrt{6}$$

$$(\frac{1}{10}\sqrt{2})^2 = 1 + 2\sqrt{2} - (\sqrt{2})^2 = 1 + 2\sqrt{2} - 2 = 2\sqrt{2} - 1$$

$$= \frac{8}{20} + 2\sqrt{2} = 2 \frac{21.21}{21}$$

$$\sqrt{4400} \approx 21.21$$

$$4 \overline{) 37} \quad 2 \cdot 2 = 4 \quad 1 = 41$$

$$40 \overline{) 21} \cdot 2 = 42$$

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